Ind. J. Psy. Soc. Work (1977), 9—14

A Behaviour Rating Scale for the Hospitalised Psychiatric Patients

* R. K. Upadhyay, M.A S., Cert. R. M., Cert. G. Th.
** P. K. Singh, M. A.

In the last three decades there has been a lot of work on the use of rating scales in clinical settings. The earliest possible work available is that of P. Wittman (1941).

There are a number of rating scales already available, like Fergus-Falls Rating Scale, Albany Behavioural Rating Scale, Hospital Adjustment Scale, Multidimensional Scale etc. for rating psychiatric patients. All of these scales have several limitations which render them unsuitable for Indian conditions. These limitations of the available rating scales led us to develop a new rating scale, the subject of the present study.

The present study is a modest attempt to evolve, modify and standardize a behaviour rating scale (i) to assess the improvement and deterioration of the hospitalised psychiatric patients efficiently, and, (ii) to know the adjustment pattern and problem of such patients in the hospital.

In this Scale, eight major areas of behaviour have been covered-(1) Self-care, (2) Orientation, (3) Relationship with Family, (4) Leisure Time Activities, (5) Work, (6) Sex (7) Psychotic Behaviour, and (8) Social Life and Interpersonal Relationship.

Area 1—**Self-care**. Under this area 5 items are kept. They pertain to appearance, routine, incontinence, care for own things, and nursing care.

Area 2—**Orientation**. Under this heading 4 items are included. They are self, time, place, and persons.

Area 3—**Relationship with the Family**. 3 items are included under this area and these are related to interest in family members, correspondence, and, requirements met by the family.

Area 4—**Leisure Time Activities**. In this category 6 items are included. They try to know about the patients' initiative, under this area and these are related to interest in family members, correspondence, and, requirements met by the family.

* Asstt. Professor of Psychiatric Social Work, Central Institute of Psychiatry, Ranchi.
** A final year D P.S.W. student. Now Psychiatric Social Worker at Chinama Hills Hospital, Lusaka, ZAMBIA.

Area 5—**Work**. There are 8 items related to patient's working condition. They try to find out his interest, punctuality, responsibility, output, learning of new skills, need for supervision, adjustment with co-workers and regularity (continuity) of the patient in the work-unit.

Area 6—**Sex**. Only four items are included under this heading. They relate to sexual urge, control on it, attempts to satisfy it and the after-effects of the attempts.

Area 7—**Psychotic Behaviour**. 10 items related to psychotic symptoms are included in this group. They are pertaining to hallucinations, delusion, speech pattern, hostility, laughing and talking to self, motility, mood, mannerism, reality contact and management.

Area 8— **Social Life and Interpersonal Relationship**. There are 9 questions trying to know the communication pattern, aggressiveness group life, social group attendance and participation, friendship, social responsibility, social manners, and relationship with staff.

All the items are rated on three point scale—frequently, occasionally and almost never. Scoring is simple. In all the areas, except in the area 7 (Psychotic Behaviour) the scoring is similar, i. e. 'frequently', 'occasionally' and 'almost never' are scored for 3, 2, 1 respectively. In area of Psychotic Behaviour the rating is in the reverse order, i.e. 'frequently', 'occasionally' and 'almost never' are scored for 1, 2, 3 respectively.

Adjustment, in this study means the outcome of individual's efforts to deal with the stress and meet his needs. The concept of adjustment pattern (behaviour pattern) gives a fairly good estimation of an individual's mental functioning and through it, it can be assessed whether the individual (patient) will be able to cope up with the social situations he will face when he goes back to the community.

Pre-Testing

The original Behaviour Rating Scale was covering 9 areas of behaviour. The one which was omitted after pre-testing was the area covering "General Knowledge". The pre-testing was conducted on the groups of long-stay hospitalized schizophrenic patients. One group was constituted of "non-adjusted" schizophrenics, and the other was of "adjusted" schizophrenics. The criteria for deciding whether a patient is "adjusted" or "non-adjusted was based on three factors, which we decided after discussing with psychiatrists, psychologists and/with other co-workers. One of the criteria was the daily routine of the patient—how regularly he attends to it. Secondly, we considered the general behaviour of the patient in the ward, whether his behaviour interferes with others' work and with the working of ward staff. Lastly, we considered whether he was a management problem or, if he needed to be restrained to control his unwanted behaviuor. On these criteria, opinions of the ward personnel were collected about the subjects, and patients were, accordingly, categorized.

The two groups of long-stay hospitalized schizophrenic patients, adjusted and non-adjusted, were matched in respect of their age, education and stay in the hospital. Only male patients were selected for this purpose.

After considering the results, the section dealing with general knowledge was omitted. It was noted that the 'General Knowledge' does not affect one's adjustment. Moreover, all other items were scored on three point scale, this section of general knowledge could be scored only on two point scale, right or wrong.

For the present study, after pre-testing, on the criteria mentioned earlier, a group of 30 male long-stay psychotic patients were selected in the adjusted group and another 30 male long-stay psychotic patients were selected in the non-adjusted group. The subjects belonged to the Central Institute of Psychiatry, RANCHI.

Both the groups were matched with one another in relation to their age, education, and duration of stay. Statistically, we did not find any significant difference between the two groups on the said variables.

METHOD :

The method followed for rating the patients is the same as that in pre-testing. This time, the work is extended beyond finding the reliability and validity of the scale. An attempt to standardize the present scale is also made.

Besides using the X^2-test, t-test and correlation method, the method of inter-rater reliability is also used An independent person, provided with enough instructions, was requested to rate one of the group (non-adjusted group) independently. A Pearson's 'r' is calculated for the two raters.

To find the reliability, the rating scale is split into two halves, by taking the odd-numbered items in one and the even-numbered items in another. Then a product-moment correlation coefficient is computed, which when substituted in the formula for inter-consistency gives the internal consistency coefficient for the whole scale.

For finding out the validity, t-test is applied to the total scores of the patients of two groups on the scale.

If the inter-rater reliability coefficient is positive and statistically significant, we can consider the scale as a stable measure for assessing the adjustment of long-stay patients.

If the scale scores' mean differentiates between the two groups, it should be evident from t-test.

When all these criteria are met by the present scale, under the study, we can infer that our scale is fairly reliable and valid in assessing the adjustment of hospitalized psychiatric patients. In other words, the scale may be called a standard instrument for assessing the adjustment of patients in hospital.

ANALYSIS AND RESULTS

The data of the present study has been analysed for finding out the reliability (internal consistency index), for assessing the validity of the new rating scale, to find out the inter-rater reliability co-efficient, an index for the stability of measurements on the scale

Reliability :-For calculating the internal consistency coefficient (an index for the reliability of the scale), the method applied is that of split-half. The rating scale is split into two halves, by taking the odd-numbered items in one and the even numbered items in another. Then a product moment correlation co efficient is computed, which when substituted in the formula for interconsistency, gives the internal consistency coefficient for the whole scale. For all the three ratings, one of the adjusted group of patients and two of the non-adjusted group of patients, the internal consistency coefficient is computed.

Internal Consistency Coefficient for the Adjusted Group of Patients :

The calculation has been shown in the Table 1.

TABLE I.

Internal consistency co-efficient for the adjusted group of patients.

xy	=	+ 358.20
x^2	=	479.5
Y^2	=	773.4
r	= +	.59
r_n	= +	.74 (significant).

The product-moment-correlation co-efficient computed for the two halves was + .59. This value of r gives a value of + .74 for the internal consistency co-efficient of the whole scale. This internal consistency co-efficient value of + .74 is found to be statistically significant. This signifies that the items of the scale are consistent in measuring the behaviour.

Internal Consistency Co-efficient for the Non-adjusted Group of Patients :—

(I) For the investigator's ratings of the non-adjusted group of patients.

TABLE—2

xy	=	875.7
x^2	=	1069.9
y^2	=	1057.8
r	= +	.82
r_n	= +	.90 (significant)

The calculation has been presented in the Table 2.

The Pearson's 'r' calculated for the two halves of the scale was + .82. This value of Pearson's 'r' when substituted in the internal consistency formula, gives a value of + .90 as the internal consistency co-efficient for the whole scale.

This value is high and is statistically significant. This signifies that the scale items are consistent in measuring the behaviour of the patients under study.

(II) For X's rating of the non-adjusted group of patients.

The calculation has been shown in the Table 3.

TABLE—3

Internal consistency coefficient for the Non-adjusted Group of Patients—for Mr X's ratings.

xy	=	649.6
x^2	=	888
y^2	=	772.7
r	= +	.78
r_n	= +	.87 (significant)

The Pearson's 'r' (the product-moment correlation coefficient) computed for the two halves of the scale was + .78, which gives an internal consistency coefficient of + .87. This value of internal consistency coefficient is found statistically significant.

The internal consistency coefficients for adjusted and non-adjusted groups of patients are + .74, + .90, and + .87 (for X's ratings) respectively. These internal consistency co-efficients suggest that this new Behaviour Ratings Scale is a fairly reliable measure for assessing the adjustment of the hospitalized (specially chronic) patients. It also suggests that the items are consistant in measuring the behaviour of the patients.

VALIDITY :—

For finding out the validity of the new Behaviour Rating Scale the t-test technique has been used. The two groups, adjusted and non-adjusted, of patients are compared with regard to their score on the Behaviour

Rating Scale. The t-test has been applied to the investigator's ratings of non-adjusted and adjusted group.

(I) t-test as applied to the investigator's ratings of adjusted and non-adjusted groups of patients (Table 4)

TABLE—4

Showing the result of t-test as applied to the ratings of the investigator of adjusted and non-adjusted patients.

Subjects	N	Mean	S.D.	SED	df	t	Remarks
Adjusted	30	118.7	7.86				
Vs.				2.52	58	15.635	P less than .01
Non-adjusted	30	79,3	11 38				(Highly significant)

The scores of the adjusted patients have a range of 103—135 (with mean 118.7 and S.D. 7.86), and the score of the non-adjusted patients have a range of 56—111 (with mean 79.3 and S.D. 11.38).

The value of 't' calculated is 15.635, which is significant at the .01 level of significance. This signifies that the two groups differ significantly. This is logically deductible as the two groups consisted of two types of patients—adjusted and non-adjusted.

The patients selected for the two groups exhibit behaviour which represents two types of behaviour. And the new Behaviour Rating Scale is able to distinguish between the two types of patients. This shows that the scale is a valid measure of adjustment of hospitalized patients.

(II) t-test as applied to the investigator's ratings of adjusted group and to the ratings of X of non-adjusted group.

Table 5 presents the result of t-test as applied to the investigator's rating of adjusted group of patients and X's ratings of non-adjusted group of patients.

TABLE—5

Showing the result of t-test as applied to the investigator's rating of adjusted group and ratings of non-adjusted group of patients by Mr. X.

Subjects	N	Mean	S.D.	S.E.D.	df	t	Remarks
Adjusted	30	118 7	7.86				
Vs.				2.33	38	16.909	P less than .01
Non-adjusted	30	79 3	10.13				(Highly significant)

The t-value is 16.909, which is found to be significant at the .01 level of significance. It signifies that there is a significant difference between the two groups. This means that the new Behaviour Rating Scale is able to distinguish the two quite different groups of patients

In short, the data when analysed for finding out whether the new Behaviour Rat-

ing Scale differentiates the two altogether different groups or not, it is seen that this scale can make a distinction between the two groups of adjusted and non-adjusted patients.

Inter-rater Reliability :—For finding the stability of the Behaviour Rating Scale's measurements, the method of inter-rater reliability is used.

For this purpose, one of the group under study was rated by an independent worker, who is not concerned with this study at any stage. And, then, a Pearson's 'r' is calculated for his and the investigator's ratings of the group. The group which was rated by the investigator and as well as by the said worker, is that of non-adjusted group of patients.

The calculation of inter-rater reliability coefficient calculation is presented in Table 9.

TABLE—9

Showing Inter-rater Reliability Coefficient.

r = + 0.871
df = 58
P less than .01 (highly significant)

The Pearson's 'r' representing the inter-rater reliability coefficient for the two ratings is found to be +.871. This value of Pearson's 'r' is highly significant. This signifies that the ratings of the two raters have high degree of similarity. This signifies that the new Behaviour Rating Scale when used by other person gives almost the same rating scores. In other words, we can say that the scale is a stable measure for assessing the adjustment of the hospitalized psychiatric patients.

In short, the results of the present study suggest that the scale is reliable (internal consistency coefficient +.74 and +.5 respectively for adjusted and non-adjusted groups of patients), valid (t-15.635, P less than .01) and stable (inter-rater reliability coefficient +.871) measure for assessing the adjustment of the long-stay psychotic patients.

REFERENCES

1. Ferguson, J. T., McReynolds, P. and Ballachy, E. L. (1953) : Hospital Adjustment Scale ; Palo Alto, Calif. : Consulting Psychologists. Press, Inc.

2. Lorr, M., Klett, C. T., McNair, D. M. & Lasky, J. J. (1963) : Inpatient Multidimensional Psychiatric Scale; Palo Alto Consulting Psychologists Press.

3. Lucero, R. J. and Meyer, B. T. (1951) A Behaviour Rating Scale Suitable for Use in Mental Hospitals. J. Clin. Psychol., 1051, 7, 250—254.

4 Shatin, L. and Freed, E. X. (1955) A Behavioural Rating Scale for Mental Patients ; J. Ment. Sci., 101, 644-653.

5. Wittman, P. (1941) : A Scale for Measuring Prognosis in Schizophrenic Patients Elgin Papers. (Elgin tate Hospital Illinois), 4, 20.